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AN ANALYSIS OF THE CRISIS CYCLE

Business men measure prosperity by the demand for their products. Indeed, rising prosperity is nothing more nor less than an increased demand for goods. If we can determine the source of this extra demand we have put our finger on the source of prosperity. Conversely, industrial depression is a general shrinkage of demand for commodities. If we can discover why demand contracts, the cause of industrial depression is revealed. It is my contention that this extra demand for goods is primarily for promotion purposes. In other words, it is a demand for capital goods to enlarge industries and to establish new ones. The activity of promotion in England is best measured by the applications for capital in the London market.¹ Less satisfactory promotion data are available for the United States—listings of stocks and bonds on the New York Stock Exchange.² For recent years, however, computations have been made of the new securities issued in the United States.³

Promotion moves in cycles. For example, promotion, as evidenced by the capital applications in the London market, increased from 1867 to a maximum in 1873, decreased from 1874 to 1876; increased from 1877 to 1881, decreased from 1882 to 1885; increased from 1886 to 1889, decreased from 1890 to 1893; increased from 1894 to 1900, decreased from 1901 to 1903; increased from 1904 to 1905, decreased in 1906. The cyclical movement is very apparent throughout this entire period.

Because promotion takes the cyclical form there are corresponding movements in credit, prices, production, transportation, commerce, wages, employment, and so on. The combination of all these movements is recognized as a prosperity cycle. Unprogressive countries in which there is little promotion do not have these

¹ Published at intervals by the *Bankers' Magazine*, London.

² *Commercial and Financial Chronicle*.

³ Babson's *Report*.

cycles.¹ But as soon as development begins—railways being constructed, mines opened up, and factories built—periods of depression in all lines of industry succeed periods of activity. The crisis of 1907 in Japan,² which ushered in a period of depression following the extremely active promotion since the Russo-Japanese War, is illustrative. The progress of the East has placed oriental countries within the ever-widening zone subject to industrial depression.

Taking up the subject more in detail, we find that during the early part of a period of stagnation in business the professional promoter is inactive (relatively speaking, since some promotion goes on at all times), because dear experience has taught him that it is then of no use to organize a new concern and get it ready for operation; that the public, in its present frame of mind, will not buy the shares of the company. The result of an attempt at promotion would be that promoters or underwriters would be left with the enterprise on their hands. The business man, who is only incidentally a promoter, does not care at this time to enlarge his business or to start any new enterprise, because he is very doubtful as to what the future may have in store, and, therefore, the risk is greater than he wishes to assume. So the state of depression continues, factories wait for increased orders, merchants get along as best they can with small sales, and economy is the watchword of the consumer.

But sooner or later the reaction from the period of gloom will come. It is not human nature to be pessimistic forever. A spirit of optimism will eventually begin to prevail although it may have no material foundation whatever. In reality, though, some cir-

¹ Burton, *Crises and Depressions*, p. 306, says: "In the preceding chapters, it has been pointed out that crises and periods of depression occur in countries where progressive forces are potent and there is rapid growth. Large accumulations of capital, which render increased enterprise possible, often furnish the basis for them; but their existence is incident to a spirit of enterprise and rapid growth rather than to great wealth. The important feature in their occurrence is the increasing proportion of expenditures in preparation for increased production, manifesting itself in the formation and prosecution of new enterprises and the building on a large scale of railroads, ships, and factories, and the providing of other means to meet increased demands. At times these expenditures for increased production attain an unusual proportion as compared with the ordinary expenditures for annual consumption or support."

² This, of course, is not the first crisis of Japan but one of the most severe.

cumstances usually arise upon which this natural optimism may be fed. It may be the promise of better crops than usual, a prospect of legislation favorable to industry, a sign of an increased demand for consumption goods. The optimism will at once register itself in a rise of prices on the stock exchanges. The promoter, who is ever alert to changes in public attitude as evidenced by stock exchange operations, will see that the time is ripe for him to begin his work.

Promotion is necessarily largely carried on with borrowed funds, chiefly obtained either directly or indirectly from the banks. One of the first signs of returning good times will therefore be an increase in the loans of banks. The increase in loans will be accompanied by a corresponding increase in deposits, since deposits originate chiefly from loans, and by an increase in note circulation. The expansion of credit is followed by a rise in the prices of such materials as are used in promoting the new enterprises. For, whether promotion activity takes the direction of factory building, railway construction, or mining development, it will call for building materials, machinery, and supplies of various kinds.

The rise in price of promotion materials will increase the margin of profit of those who produce these goods. Greater profits will encourage expansion of those businesses enjoying the larger profit, thus giving additional stimulus to promotion. They will also encourage an increased expenditure for consumption goods, in turn causing the price of such goods to rise. Increased profits in one industry mean, then, increased profits in others by this process of diffusion of prosperity. Increased profits in many lines will result eventually in a general rise in the standard of living. Demands for capital goods are thus heavily reinforced by increased demands for consumption goods, resulting in a general rise of prices. Therefore those countries which are most active in promotion experience the greatest increase, not only in the prices of capital goods, but in the cost of living as well.

The theory of prosperity as here set forth claims, then, the establishment of a causal chain: increased promotion, expansion of credit, rise of prices. When promotion slows up, the reverse would follow: contraction of credit, fall of prices. This, I hold,

is what actually takes place during every cycle of prosperity. To substantiate this claim it is necessary to show, in the first place, that prices rise and fall in correspondence with credit changes, and, in the second place, that demand or lack of demand for loans to further promotion is the dominant element in the expansion and contraction of credit. It is not so easy as might seem to prove (or disprove) these propositions by recourse to statistics, for two reasons: loans do not *always* contract and expand to correspond with changes in promotion activity, and expansion and contraction of loans are not *always* followed by corresponding changes in prices. These discrepancies, however, are apparent rather than real, as will be shown.

Attention is first given to the proposition that prices rise and fall during short periods of time because credit expands and contracts.¹ The tables showing the relative movements of loans and prices are first presented. In Table I the length of time after a crisis, before loans and commodity prices reach a minimum point, is given. The minimum, of course, marks the turning point in loans and prices—the end of decreasing loans and falling prices and the beginning of increasing loans and rising prices. Hence the significance of the comparison. To support the theory advanced of the causal relation between credit and prices, loans should reach a minimum earliest and increasing loans be followed by rising prices. And such is the case. Thus in the United States after the crisis of 1848 both loans and prices began to increase in 1850; after the crisis of 1857 loans began to increase in 1859 while prices did not begin to rise until 1861; after the crisis of 1873 loans began to expand in 1879 and prices began to rise in 1880; after the crisis of 1884 loans began to increase the following year, 1885, and prices began to rise in 1887; after the crisis of 1893 loans began to increase in 1894, but the increase was not at once marked and was followed by a reaction in 1896, so that the fall of prices was not checked until 1897 and their actual rise began in 1898; after the crisis of 1903 loans

¹ It is not necessary to introduce any discussion of the relation between gold and prices since gold is essentially a long-time factor, and the subject in hand deals only with short-time periods. Further to simplify arguments no reference is made to changes in velocity of credit circulation, and only indirectly to changes in the volume of trade as factors in fixing the price level.

increased in 1904, prices rose in 1905; loans and prices both increased in 1909 following our 1907 crisis. Similar results are obtained by comparing loans and prices in England, France, and Germany.

TABLE I*
MINIMUM POINTS OF LOANS AND PRICES AFTER A CRISIS

Crisis	Loans Years	Prices Years
<i>United States—</i>		
1848.....	1	1
1857.....	1	3
1873.....	5	6
1884.....	0†	2
1893.....	3	4
1903.....	0†	1
1907.....	1	1
Average.....	1 yr. 6 mos.	2 yrs. 7 mos.
<i>France—</i>		
1847.....	3	0†
1857.....	1	4
1864.....	4	6
1873.....	6	6
1889.....	3	7
1900.....	2	2
Average (omitting 1847).....	2 yrs. 8 mos.	4 yrs. 2 mos.
<i>Germany—</i>		
1883.....	4	4
1891.....	3	6
1900.....	2	4
Average.....	3 yrs.	4 yrs. 8 mos.
<i>England—</i>		
1847.....	2	2
1857.....	1	1
1866.....	3	4
1873.....	3	6
1883.....	4	4
1890.....	4	6
1900.....	3	3
Average.....	2 yrs. 10 mos.	3 yrs. 8 mos.

* In this table the simple arithmetic average is used in summing up results for each country. Since the movements are uniform in each instance, the same result would be obtained by any other method of summarizing, hence the choice of the simplest. The data for loans in the United States are taken for 1830-62 from *History of Banking in All Nations*, I, 456; for 1865-1903 from U.S. Public Documents, No. 4658, pp. 153-55; and for 1904 to date from U.S. Statistical Abstract. French loans—that is, discounts of the Bank of France—are given for 1800-87 in Juglar, *Crises commerciales*, p. 400; and for 1890-1907 in Patron, *Bank of France* (Report of the National Monetary Commission), p. 16. The figures for German loans—loans of the Reichsbank—are found, 1876-94, in *History of Banking in All Nations*, IV, 48-49; 1895 to date, *Bankers' Magazine*, London. English loan figures—"other securities" of the Bank of England, 1844-1900, are from Palgrave, *Bank Rate and the Money Market*, pp. 12-15; 1896-1908—"total securities"—from Webb, *New Dictionary of Statistics*, p. 56.

The Aldrich and the Bureau of Labor prices for the United States are used. French prices are Palgrave's, 1847-83, found in Laughlin, *Principles of Money*, pp. 208-9, and internal market prices, 1891-1908, from Webb, *op. cit.*, p. 501. German prices are Soetbeer's and import prices at Hamburg from Webb, p. 502. Sauerbeck's prices are used for England.

† The crisis year.

The relative movements of loans and prices show a striking uniformity. In each country the loans of the banks increase before a rise in prices occurs. After twenty-two crises out of the twenty-three considered, loans begin to increase at the same time or earlier than prices (France in 1847 is the exception). Is it then going too

TABLE II*

INTERVAL BY WHICH MAXIMUM POINTS OF LOANS AND PRICES PRECEDE A CRISIS

Crisis	Loans Years	Prices Years	Bearing on Theory Advanced
<i>United States—</i>			
1848.....	o†	1	Against
1857.....	o	1	"
1873.....	2 (after crisis)	1	"
1884.....	1	2	"
1893.....	1	4	"
1903.....	o	o	For
1907.....	o	o	"
<i>France—</i>			
1857.....	o	1	Against
1864.....	o	o	For
1873.....	o	1	Against
1882.....	o	2	"
1900.....	1 (after crisis)	o	"
1907.....	1	o	For
<i>Germany—</i>			
1883.....	2	o	For
1891.....	1	o	"
1900.....	1 (after crisis)	1 (after crisis)	"
<i>England—</i>			
1847.....	o	o	For
1857.....	o	o	"
1866.....	o	2	Against
1873.....	o	o	For
1883.....	1	3	Against
1890.....	1 (after crisis)	1 (after crisis)	For
1900.....	1	o	"
1907.....	2	o	"

* Table II does not show the uniformity of movement that is found in Table I, therefore averaging is not attempted. The data are obtained from the same sources as the other table (I).

† The crisis year is represented by "o" as in Table I.

far to say that *because* the banks increase their loans prices begin to rise? Through the extension of loans the purchasing power of the public has been increased; this purchasing power is used to secure commodities, and the enlarged demand for goods causes their prices to rise.

Table II gives the maximum points, before a crisis, of loans and prices. The one that reaches a maximum earliest will be the first

to fall. To verify the theory that credit controls price movements, loans should reach a maximum first and by contraction cause a fall of prices. In the instances given, loans do contract at the same time with, or prior to, the fall of prices 13 times out of the 24. But there remain 11 cases in which the fall of prices precedes the contraction of loans. These exceptions may, however, be explained satisfactorily in either of two ways.

In the first place, promotion may have so stimulated production that the latter tends to outstrip demand, and loans, although increasing in amount, may still have been inadequate to maintain prices at the former high level. The result would be increasing sales but at a lower price. This phenomenon occurs frequently in the stock market. There will be a fall in prices yet a larger sale of shares, so that the total turnover is greater than when prices were higher. In verification of this Table III is offered. It will be seen that in 1889, 1890, and 1891 as compared with 1888 the sales of shares were larger but the average prices were lower. The same is true of 1904 as compared with 1903.

TABLE III*
NEW YORK STOCK EXCHANGE

Year	Sales of Shares	Average Price
1888.....	65,179,000	62.5
1889.....	72,015,000	61.0
1890.....	71,282,000	60.2
1891.....	69,031,000	57.1
1903.....	161,102,000	73.2
1904.....	187,312,000	69.9

* The *Commercial and Financial Chronicle* (second issue in January) gives the sales of shares and the average prices of the shares.

The second and probably the more important explanation why prices fall before the contraction of credit occurs is that there may have been an absolute decrease in the amount of credit offered for goods even though the loans of the banks were increasing. This is possible if a growing proportion of the credit being given by the banks is used, not to purchase goods, but for speculative purposes on stock exchanges and elsewhere. The credit that raises the

prices of commodities is the credit that is used to buy goods, and not credit that is used for other purposes.¹

The effect of speculation on commodity prices is indirect. In the first place, activity in the stock market is a stimulus to investment—the public is attracted to the market, and hence to promotion; an inactive market discourages investment and promotion. In the second place, the amount of loaning and discounting the banks can do is limited² both by law³ and by the conservatism of the banks themselves. It is safe to say, therefore, that in prosperous times a part of the credit used in speculation is diverted from commercial channels. Business men frequently complain of that condition. In other words, the amount of funds offered for goods is not so great and therefore commodity prices are not so high as they would have been if speculation had been less active. In the third place, the use of credit for speculative purposes affects commodity prices through its action on the rate of interest. At a given moment the rate of interest depends upon the demand for loans and discounts (and the supply of loanable funds), and this demand, as already stated, is of two kinds: for commercial purposes

¹ Mill makes a similar statement regarding money. He says (Laughlin's edition of Mill, p. 300): "It frequently happens that money to a considerable amount is brought into the country, is there actually invested as capital, and again flows out, without having ever once acted upon the markets of commodities, but only upon the market of securities, or, as it is commonly though improperly called, the money market."

² Dunbar, *Theory and History of Banking*, p. 30, says: "In general, then, for every bank, in its place and under the circumstances of the time, there is some line below which its provision of cash cannot safely fall. This provision of cash, which in the account last given includes the cash items, specie, and legal-tender notes is called the reserve, and the necessity of maintaining a certain minimum reserve fixes a limit to the ability of the bank to increase its securities. For obviously any increase of securities, that is, of loans or bonds, must ordinarily be effected, either by an increase of deposits, or by an actual expenditure of cash. In the one case the proportion of reserve to demand liabilities would be weakened by the increase of liabilities; in the other it would be weakened by the decrease of cash. If, then, the reserve were already as low as prudence would allow, or were threatened by approaching heavy demands from depositors, no increase of securities could be made without serious risk."

³ The United States national banks are required to maintain a minimum reserve of 25 per cent for city banks and 15 per cent for country banks. When the reserve of any national bank falls below the legal requirement any increase of liabilities by making new loans or discounts is forbidden.

and for speculation. This joint demand is the decisive factor in fixing the rate of interest. When speculation is active, therefore, the demand for credit for speculative purposes tends to raise the rate of interest. The rise in interest rates affects prices in two ways. It tends to check borrowings both for promotion purposes and for securing consumption goods. The demand for commodities in such a case is certainly less than it would be in the absence of the heavy demand for speculative credit. Again, a certain amount of borrowing is necessary under present conditions for the carrying-on of any business, so that a rise in interest rates means to businesses an increased cost of production as truly as does an increase in the cost of raw materials, or a higher wage-scale, and, it follows, causes an increase in the market price of commodities so affected.

This discussion of speculative credit and of its effect on interest rates, etc., is merely to emphasize the fact that it is a kind of credit distinct from commercial credit.¹ If we had some means of separating commercial credit from the total of commercial credit plus speculative credit, and if we then compared commercial credit and prices, is it not possible, indeed probable, that in all cases, instead of three-fourths (counting both upward and downward movements), there would be a correspondence between credit movements

¹ The distinction between speculative credit and commercial credit is not a fanciful one as may be shown by the following table:

LOANS OF THE NEW YORK BANKS, AUGUST 22, 1907

Origin of Loan	Nature of Loan	Amount In Millions
Commercial.....	On demand, paper with one or more individual or firm names.....	\$ 16.2
Stock Exchange.....	On demand, secured by stocks, bonds, and other personal securities.....	251.8
Commercial.....	On time, paper with two or more individual or firm names.....	161.1
Commercial.....	On time, single-name paper (one person or firm), without other security.....	130.5
Largely stock exchange....	On time, secured by stocks, bonds, and other personal securities, or by real estate mortgages or other liens on realty.....	152.4

Cf. Sprague, *History of Crises under the National Banking System*, pp. 301-2, 92. Professor Sprague lays much stress upon the differences between the two kinds of loans in practical operation and expresses the opinion that "a New York bank would be in a better position to meet an emergency if all its loans were upon commercial paper than it is under existing circumstances, though of course it would not then be in position to slide along just above the 25 per cent requirement in normal times."

and prices? The only statistics, so far as I am aware, that could serve as a guide to the relative amounts in use of the two kinds of credit come from the analysis of clearings at the London bankers' clearing-house.¹ The clearings on stock exchange settlement days would roughly stand for speculative credit. The clearings on the fourth of each month would be typical of commercial credit because trade bills are usually made to fall due the first of the month, and since custom adds three days of grace, these bills are cleared on the fourth. Clearings of both kinds increase during prosperous years and fall off during the years of depression. But during the height of prosperity stock exchange clearings form a much larger proportion of the total clearings than they do at the beginning of the period.² This fact would explain why at the beginning of an upward movement the increases of loans and prices occur in the expected order; and why, in the decline of prosperity, prices sometimes fall before loans contract, since speculative credit is at that time expanding relative to commercial credit, and thus, by increasing the total loans, concealing the actual contraction of commercial credit. In a comparison of the maximum points of business clearings and stock exchange clearings, the former show a tendency to fall off first³—further evidence that sustained loan expansion after prices fall is due to speculative credit and not to commercial credit.

It now remains to show that the most important part of commercial credit is that which is used to further promotion; that is, that the increased loans are primarily for the purchase and production of capital goods, and only secondarily for the purchase and production of consumption goods. Statistical investigation strengthens the belief that prosperity is founded upon promotion activity and accompanied by an increased demand for consumption goods, and not the reverse—a primary demand for consumption goods and a secondary demand for capital goods. Four lines

¹ *Bankers' Magazine*, London.

² During the height of prosperity the clearings of New York City expand relatively faster than clearings for the rest of the country. This is due chiefly to the expansion of credit for speculative purposes.

³ See Table XV in my article on credit and prices in *University Studies* (University of Nebraska), January, 1907.

of investigation have been carried out and the tables and the interpretation of the tables follow.

TABLE IV
PROMOTION AND PRICES IN ENGLAND

Increasing Promotion Year	Decreasing Promotion Year	Rising Prices Year	Falling Prices Year
1870		1870	
1871		1871	
1872		1872	
1873		1873	
	1874		1874
	1875		1875
	1876		1876
1877			1877
1878			1878
1879			1879
1880		1880	
1881			1881
	1882		1882
	1883		1883
	1884		1884
	1885		1885
1886			1886
1887			1887
1888		1888	
1889		1889	
	1890	1890	
	1891	1891	
	1892		1892
	1893		1893
1894			1894
1895			1895
1896			1896
1897		1897	
1898		1898	
1899		1899	
1900		1900	
	1901		1901
	1902		1902
	1903		1903
1904		1904	
1905		1905	
	1906	1906	
	1907	1907	
1908			1908
1909		1909	
1910		1910	

1. Promotion activity or inactivity is compared with general price movements. If promotion credit is the dominant form of commercial credit, and other kinds of credit conform more or less

closely to promotion conditions, then there should be a correspondence between promotion activity and price movements. And such is the case as shown in Tables IV–VII, inclusive.¹

Table IV shows how close is the correspondence, on the one hand, between the years of increasing promotion and the years of rising prices; and, on the other hand, between declining promotion and falling prices.

Table V shows that the years of most active promotion are also the years of highest prices. The correspondence is quite striking during the half-century in England for which figures are available.

TABLE V
MAXIMUM POINTS OF PROMOTION AND PRICES IN ENGLAND

Crisis	Period of Maximum Promotion	Period of Maximum Prices	Year of Maximum Promotion	Year of Maximum Prices
1873.....	{ 1872 1873 1874 }	{ 1872 1873 1874 }	1873	1873
1883.....	{ 1880 1881 1882 }	{ 1880 1881 1882 }	1881	1880
1890.....	{ 1888 1889 1890 }	{ 1889 1890 1891 }	1889	1889 1890 } same 1891 }
1900.....			1900	1900
1907.....			1905	1907

In Table VI the years of active promotion are grouped together and an average of capital applications for those years is taken; the average of capital applications for the following years of inactive promotion is also found, and so on throughout the period. Such an arrangement brings out clearly the difference in the rate of promotion between active and inactive years. The cyclical movement in promotion is also rendered very apparent. The crises of 1873, 1883, and 1890, are each preceded by three years of active promotion and followed by five years of inactive promotion. Grouping

¹ In all of these tables Sauerbeck's prices for England are used.

annual prices arbitrarily to correspond to the years of the promotion groups and averaging the index numbers of each group, we find that the result is, as might be expected—since the trend of

TABLE VI
COMPARISON OF CAPITAL APPLICATIONS* AND PRICES IN ENGLAND

Year	Capital Applications during Period of Active Promotion £00,000	Capital Applications during Period of Inactive Promotion £00,000	Prices during Period of Active Promotion	Prices during Period of Inactive Promotion
1872.....	151.5	.....	109	.....
1873.....	154.7	.....	111	.....
1874.....	114.1	.....	102	.....
Average....	140.1	.....	107.3	.....
1875.....	.....	62.6	.....	96
1876.....	.....	43.2	.....	95
1877.....	.....	51.5	.....	94
1878.....	.....	59.2	.....	87
1879.....	.....	56.5	.....	83
Average....	.....	54.7	.....	91
1880.....	122.2	.....	88	.....
1881.....	189.4	.....	85	.....
1882.....	145.5	.....	84	.....
Average....	152.4	.....	85.7	.....
1883.....	.....	81.1	.....	82
1884.....	.....	109.3	.....	76
1885.....	.....	78.0	.....	72
1886.....	.....	101.1	.....	69
1887.....	.....	98.1	.....	68
Average....	.....	93.7	.....	73.4
1888.....	160.1	.....	70	.....
1889.....	189.4	.....	72	.....
1890.....	142.6	.....	72	.....
Average....	164.0	.....	71.3	.....
1891.....	.....	104.6	.....	72
1892.....	.....	81.1	.....	68
1893.....	.....	49.1	.....	68
1894.....	.....	91.8	.....	63
1895.....	.....	104.7	.....	62
Average....	.....	86.3	.....	66.6
1896.....	152.8	.....	61	.....
1897.....	157.3	.....	62	.....
1898.....	150.2	.....	64	.....
1899.....	133.2	.....	68	.....
1900.....	165.5	.....	75	.....
1901.....	159.4	.....	70	.....
1902.....	153.8	.....	69	.....
Average....	153.2	.....	67	.....

* Given in *London Economist*.

prices is downward throughout the period (except its closing years)—a decreasing average index number as follows: 107.3, 91.0, 85.7, 73.4, 71.3, 66.6. It looks at first glance as though promotion had had no effect whatever upon prices; but when the *rate* of fall is taken into consideration the effect is revealed. That is shown in Table VII.

By figuring out the rate of fall of prices from period to period as marked off in Table VI, we find that the rate of fall is lower during the periods of active promotion than during the years of inactive promotion. The inference is that active promotion through expansion of promotion credit in each instance checked the rate of fall of prices in spite of a relatively small gold production which tended toward the appreciation of gold.

TABLE VII
COMPARATIVE FALL OF PRICES AS AVERAGED IN TABLE VI

Prices	Total Fall Per cent	Average Yearly Fall Per cent	Condition of Promotion
107.3 to 91.0.....	15.2	3.0	Inactive
91.0 to 85.7.....	5.8	1.9	Active
85.7 to 73.4.....	14.4	2.9	Inactive
73.4 to 71.3.....	2.9	1.0	Active
71.3 to 66.6.....	6.6	1.3	Inactive
66.6 to 66.7.....	0.4 rise	0.06 rise	Active

2. The order in which prices rise should throw some light upon whether the primary demand is for consumption goods or for capital goods. There are at hand no special index numbers of prices of capital goods separate from consumption goods. But the groups of prices as prepared in the Aldrich and Bureau of Labor reports roughly serve the purpose. The index numbers for food, clothing, and house furnishing goods may be taken as representative of prices of consumption goods; the index numbers of fuel and lighting, metals and implements, and building materials may stand for capital or promotion goods. The recent period of prosperity in the United States, beginning with 1896, as is well known, was inaugurated by an increased foreign demand for our food products, causing food prices to rise, and the prosperity of the farmers was passed on to those in other branches of industry. Such is also the trend of price movements in the United States on the average of the seven

prosperity periods for which statistics are available. Food prices and clothing prices rise first and other prices follow. But in Germany and England, where agriculture is not so important, the rise

TABLE VIII*

ORDER OF RISE OF PRICES BY GROUPS OF COMMODITIES IN THE UNITED STATES

BEFORE CRISIS		CONSUMPTION GOODS			CAPITAL GOODS		
		Food	Clothing	House Furnishing Goods	Fuel and Lighting	Metals	Lumber and Building Materials
1848	Year.....	1844	1844	1844	1845	1844	1845
	Rank.....	2½	2½	2½	5½	2½	5½
	Year.....	1850	1850	1853	1853	1851	1852
1857	Rank.....	1½	1½	5½	5½	3	4
	Year.....	1860	1860	1870	1868	1870	1871
1873	Rank.....	2½	2½	4½	1	4½	6
	Year.....	1880	1880	1880	1879	1880	1880
1884	Rank.....	4	4	4	1	4	4
	Year.....	1886	1886	1888	1887	1890	1886
1893	Rank.....	2	2	5	4	6	2
	Year.....	1897	1898	1898	1899	1899	1898
1903	Rank.....	1	3	3	5½	5½	3
	Year.....	1904	1904	1906	1906	1905	1904
1907	Rank.....	2	2	5½	5½	4	2
Total rank		15½	17½	30	28	29½	26½
Final rank		1	2	6	4	5	3

* The group which begins to rise earliest is ranked 1, the next to rise is ranked 2, and so on. For example, before the crisis of 1903 food rose earliest and is ranked 1; next three groups rise in 1898, therefore ranks 2, 3, and 4 are divided equally among the three, giving them an average rank of 3; fuel and lighting, and metals rise last, in 1899, therefore ranks 5 and 6 are divided between them, giving an average rank of 5½. The same method of ranking is followed in all the tables.

in prices of capital goods, as represented by minerals and metals, occurs before that of consumption goods, that is, before food and textiles.¹

3. If the primary demand during prosperity is for capital goods, then the prices of capital goods might be expected to rise higher

¹ I am inclined to think that a partial explanation of the relatively late rise of metal prices in the United States is that the list of commodities on which the index number is based includes many that are not, strictly speaking, promotion commodities. This is not true of the corresponding groups for England and Germany. Sauerbeck's group of minerals for England includes pig-iron, bar-iron, copper (two grades), tin, lead, coal (two grades); Soetbeer's prices of minerals and metals for Germany are based on coal, iron ore, bar-iron, steel, lead, zinc, tin, copper, quicksilver, sulphur, saltpeter, salt, lime, cement; the United States group, metals and implements, comprises anvils, bar-iron, butts, copper (2 grades), doorknobs, iron rods, iron wire, lead shot, lead (2 grades), locks (2 grades), meat-cutters, cut nails, pig-iron, pocket-knives (25 grades), quicksilver, rope (3 grades), saws (4 grades), scythes, shovels, spelter, wood screws.

than the prices of consumption goods. Statistics show that such is the tendency in Germany and England. In a comparison of the average rise of the three groups of commodities, food, textiles, and

TABLE IX
ORDER OF RISE OF PRICES BY GROUPS OF COMMODITIES

ENGLAND			
BEFORE CRISIS	CONSUMPTION GOODS		CAPITAL GOODS
	Total Food	Textiles	Minerals
1857 Year.....	1852	1852	1852
Rank.....	2	2	2
1866 Year.....	1859	1859	1862
Rank.....	1½	1½	3
1873 Year.....	1871	1872	1869
Rank.....	2	3	1
1883 Year.....	1880	1880	1880
Rank.....	2	2	2
1890 Year.....	1888	1887	1886
Rank.....	3	2	1
1900 Year.....	1897	1898	1896
Rank.....	2	3	1
1907 Year.....	1904	1902	1905
Rank.....	2	1	3
Total rank.....	14½	14½	13
Final rank.....	2½	2½	1

GERMANY			
BEFORE CRISIS	CONSUMPTION GOODS		CAPITAL GOODS
	Agricultural Products	Textile Materials	Minerals and Metals
1857 Year.....	1852	1854	1852
Rank.....	1½	3	1½
1866 Year.....	1865	1859	1863
Rank.....	3	1	2
1873 Year.....	1871	1872	1869
Rank.....	2	3	1
1883 Year.....	1879	1881	1880
Rank.....	1	3	2
1891 Year.....	1888	1888	1887
Rank.....	2	2	1
Total rank.....	9½	12	7½
Final rank.....	2	3	1

metals, Germany, England, and the United States each give a different result. But the average rise of these commodities for the three countries combined for the nineteen crisis periods is greatest

for minerals, 12.1 per cent; for food it is 10.6 per cent; and for textiles, 9.8 per cent. In the United States it is found that, in a comparison of the three groups of consumption commodities, food, clothing, and house furnishing goods, with the three groups of capital goods, fuel and lighting, metals, and building materials, the latter, on the average, rise more than the former. Yet Table XI does not bring to light any pronounced tendency for prices of capital goods in the United States to rise higher than the prices of consumption goods. Since the number of crises considered is so small (seven), it may happen that our next crisis figures will swing the balance in favor of consumption goods. The great promotion commodity, pig-iron, however, is subject to remarkable advances in prices during each prosperity period.¹

PRICES OF PIG-IRON IN NEW YORK
(From Hull, *Industrial Depressions*, Appendix G)

Year	Lowest	Highest	Percentage of Rise	Year	Lowest	Highest	Percentage of Rise
1825.....	\$35.00	\$75.00	114	1868.....	\$35.00	\$45.75	103
1826 (crisis)...	50.00	70.00		1869.....	34.50	45.00	
1827.....	50.00	55.00		1870.....	31.00	37.00	
1828.....	50.00	55.00		1871.....	30.00	39.00	
1829.....	40.00	55.00		1872.....	33.50	61.00	
1830.....	40.00	50.00		1873 (crisis)...	37.00	52.00	
1831.....	40.00	47.50		1874.....	33.00	45.00	
1832.....	40.00	47.50		1875.....	29.00	41.00	
1833.....	37.50	47.50		1876.....	27.50	34.00	
1834.....	37.50	48.00		1877.....	25.00	28.00	
1835.....	38.00	42.50		1878.....	21.50	26.50	
1836.....	38.00	62.50		1879.....	19.00	30.50	
1837 (crisis)...	40.00	70.00		1880.....	21.00	35.00	
1838.....	37.50	55.00	87	1881.....	22.00	26.00	84
1839.....	37.50	45.00		1882.....	23.00	26.50	
1840.....	32.50	40.00		1883.....	21.00	25.00	
1841.....	32.00	37.50		1884 (crisis)...	18.00	20.50	
1842.....	23.50	35.00		1885.....	17.75	18.25	
1843.....	22.50	32.00		1886.....	18.25	20.00	
1844.....	30.00	35.00		1887.....	20.50	21.50	
1845.....	30.00	52.50		1888.....	18.00	21.00	
1846.....	35.00	42.50		1889.....	17.00	19.25	
1847.....	30.00	42.50		1890.....	18.00	19.00	
1848 (crisis)...	25.00	37.50		1891.....	17.50	17.75	
1849.....	22.50	27.50		1892.....	15.00	17.50	
1850.....	21.00	24.00		1893 (crisis)...	13.75	15.00	
1851.....	19.00	25.00	123	1894.....	12.50	13.37	122
1852.....	19.00	31.00		1895.....	12.00	14.50	
1853.....	28.50	38.00		1896.....	12.50	13.50	
1854.....	32.00	42.50		1897.....	11.75	12.75	
1855.....	26.50	37.00		1898.....	11.25	12.00	
1856.....	29.00	37.00		1899.....	12.12	25.00	
1857 (crisis)...	28.00	37.50		1900.....	10.00	25.00	
1858.....	22.00	27.00		1901.....	15.50	16.25	
1859.....	22.00	31.50		1902.....	17.50	24.87	
1860.....	20.50	27.00		1903 (crisis)...	15.87	24.00	
1861.....	20.00	24.50		1904.....	15.00	17.62	
1862.....	21.00	33.00		1905.....	17.25	19.00	
1863.....	32.50	45.00		1906.....	19.00	26.50	
1864.....	43.00	80.00	300	1907 (crisis)...	18.87	27.50	83
1865.....	40.00	55.00		1908.....	17.00	18.75	
1866.....	42.00	55.00		1909.....	16.50	19.50	
1867 (crisis)...	38.00	49.00		1910.....	16.00	19.50	

It is not necessary, however, for the support of the theory advanced, that prices of capital goods should be shown to rise

TABLE X
RISE OF PRICES BY GROUPS OF COMMODITIES

CRISIS	CONSUMPTION GOODS		CAPITAL GOODS
	Food Percentage	Textiles Percentage	Minerals Percentage
<i>England—</i>			
1857.....	24.2	24.8	33.7
1866.....	4.7	24.4	1.3
1873.....	7.6	5.6	22.4
1883.....	.7	1.1	2.7
1890.....	3.6	4.1	9.9
1900.....	6.1	10.8	23.9
1907.....	4.2	12.6	16.0
<i>Germany—</i>			
1857.....	34.9	4.3	15.9
1866.....	8.1	19.1	4.8 (fall)
1873.....	7.7	1.1	19.0
1883.....	3.4	2.8 (fall)	1.4
1891.....	9.6	1.9	10.1
<i>United States—</i>			
1848.....	9.5	2.8 (fall)	5.6
1857.....	26.6	15.5	2.7
1873.....	6.2	17.1	6.0
1884.....	13.1	5.7	.9
1893.....	5.0	2.6 (fall)	1.4 (fall)
1903.....	20.8	9.1	43.3
1907.....	6.1	8.8	16.5
Average.....	10.6	9.8	12.1

TABLE XI
RISE OF PRICES BY GROUPS OF COMMODITIES IN THE UNITED STATES

CRISIS	CONSUMPTION GOODS			CAPITAL GOODS		
	Food Percentage	Clothing Percentage	House Furnishing Goods Percentage	Fuel and Lighting Percentage	Metals and Implements Percentage	Lumber and Building Materials Percentage
1848.....	9.5	2.8 (fall)	9.3	20.3	5.6	2.8
1857.....	26.6	15.5	5.0	18.1	2.7	6.7
1873.....	6.2	17.1	15.7	1.7 (fall)	6.0	16.0
1884.....	13.1	5.7	12.5	13.3	.9	12.8
1893.....	5.0	2.6 (fall)	2.7	4.2	1.4 (fall)	2.7 (fall)
1903.....	20.8	9.1	17.5	25.2	43.3	20.8
1907.....	6.1	8.8	3.5	2.4	16.5	8.6
Average...	12.5	8.8	9.5	11.8	10.5	10.1

Average of consumption goods, 10.3 per cent; of capital goods, 10.8 per cent

higher than the prices of consumption goods. It might be that the rise of the standard of living which accompanies promotion activity is so great that the prices of consumption goods are carried to even a much higher point than the prices of capital goods. It is possible that that is what happens in the United States, since ranking or weighting¹ Table XI turns the result slightly in favor of consumption goods. But, as stated above, more crises must be taken into account before the point in question can be convincingly discussed. Although prices of consumption goods may ultimately be

TABLE XII

PERCENTAGE OF TOTAL RISE OF PRICES OF GROUPS OF COMMODITIES DURING FIRST HALF OF THE PERIOD OF PROSPERITY
UNITED STATES

CRISIS	CONSUMPTION GOODS			Average	CAPITAL GOODS			Average
	Food	Clothing	House Furnishing Goods		Fuel and Lighting	Metals	Lumber and Building Materials	
1848...	49.1	100.0	19.1	56.1	100.0	47.0	47.9	65.0
1857...	27.8	39.0	69.3	45.4	38.3	100.0	57.2	65.2
1873...	99.9	33.4	54.7	62.7	100.0	23.6	42.8	55.5
1884...	47.7	78.7	59.5	61.6	39.9	100.0	51.9	63.9
1893...	67.6	100.0	57.1	74.9	87.5	100.0	100.0	95.8
1903...	35.8	39.2	30.2	35.1	33.4	49.0	35.0	39.1
Average of consumption goods...				56.0	Average of capital goods...			64.1

found to rise more than prices of capital goods in this country, there is good evidence remaining that promotion nevertheless is the dominant factor in prosperity and that the rise of the standard of living accompanies promotion and not the reverse. This evidence is found in the fact that the prices of promotion goods make a relatively larger part of their rise in the first half of the period of prosperity than do the prices of consumption goods. For example, in the cycle of 1893, 95.8 per cent of the total rise in the prices of capital goods occurred during the first half of prosperity; and only 74.9 per cent in the case of consumption goods. There is only one

¹ The weights used were food (3); clothing (2); house furnishing goods (1); fuel and lighting (1); metals (3); lumber and building materials (2).

exception (1873) to this general tendency. On the average, then, capital goods made 64 per cent of their gains in price during the first half of prosperity, and consumption goods only 56 per cent.

4. If the check to prosperity is the falling-off of promotion activity, then there should be a tendency for the prices of capital goods to fall before the prices of consumption goods. Table XII shows that the demand for consumption goods in the United States is relatively stronger during the second half of prosperity than during the first, and that the demand for capital goods is relatively stronger during the first half of prosperity than during the latter part. This is equivalent to showing that the demand for capital goods falls off relatively before the demand for consumption goods. The absolute fall of prices of the three great groups of commodities, textiles, minerals, and food, occurs uniformly in the order named, in the three countries, Germany, England, and the United States. Very probably the reason that textile prices decline first is because it is easier to overproduce in that line than in some others.¹ Prices may fall then, not because demand has actually fallen off, but because production has outstripped demand. Instead of decreased sales of textiles there might still be larger sales but at a lower price. In comparing the six groups of commodities for the United States, there is a tendency on the average for the prices of capital goods to fall before the prices of consumption goods.

It may be well, as a final word, to meet possible criticism of the tables by a statement of the reasons for the methods chosen in their preparation and presentation, and by giving my own appraisal of the tables. The one who prepares a table realizes the weak points it may possess quite as well as its strong points. In the

¹ Iron and steel products are largely turned out to meet orders, hence demand and supply are kept closely in touch. The unfilled orders of the United States Steel Corporation (Hull, *Industrial Depressions*, Appendix Q) as given in official reports are in round numbers as follows:

UNFILLED ORDERS OF UNITED STATES STEEL CORPORATION

December 31	Tonnage	December 31	Tonnage
1901.....	4,497,000	1906.....	8,490,000
1902.....	5,347,000	1907.....	4,624,000
1903.....	3,215,000	1908.....	3,603,000
1904.....	4,606,000	1909.....	5,927,000
1905.....	7,605,000	1910.....	2,674,000

first place, no attempt has been made to present weighted tables, since the number of items dealt with is so small that the outcome of a weighted average would depend almost wholly upon the size of the weights used. The figures are presented in each case and any special student of the subject may readily prepare a weighted table

TABLE XIII

ORDER OF FALL OF PRICES BY GROUPS OF COMMODITIES IN ENGLAND AND GERMANY

CRISIS		CONSUMPTION GOODS		CAPITAL GOODS
		Food	Textiles	Minerals
<i>England—</i>				
1857	Year.....	1858	1858	1855
	Rank.....	2½	2½	1
1866	Year.....	1868	1865	1865
	Rank.....	3	1½	1½
1873	Year.....	1874	1873	1874
	Rank.....	2½	1	2½
1883	Year.....	1881	1881	1883
	Rank.....	1½	1½	3
1890	Year.....	1890	1890	1891
	Rank.....	1½	1½	3
1900	Year.....	1901	1901	1901
	Rank.....	2	2	2
1907	Year.....	1909	1907	1908
	Rank.....	3	1	2
Total rank.....		16	11	15
<i>Germany—</i>				
1857	Year.....	1856	1858	1858
	Rank.....	1	2½	2½
1866	Year.....	1868	1865	1865
	Rank.....	3	1½	1½
1873	Year.....	1875	1873	1874
	Rank.....	3	1	2
1883	Year.....	1884	1883	1881
	Rank.....	3	2	1
1891	Year.....	1892	1890	1892
	Rank.....	2½	1	2½
Total rank.....		12½	8	9½

if, in any instance, weighting seems to him necessary. In the second place, the number of crises considered necessarily is small. For this reason unless a pronounced tendency in some direction is revealed in a table the conclusions drawn from it must be only tentative. This weakness in Table XI, I have frankly admitted. But most of the tables do show a pronounced trend. Such in fact

is the case with all the tables except XI, just mentioned, and possibly XIV. In the third place, if a table reveals a general trend, a

TABLE XIV

ORDER OF FALL PRICES BY GROUPS OF COMMODITIES IN THE UNITED STATES

CRISIS		CONSUMPTION GOODS			CAPITAL GOODS		
		Food	Clothing	House Furnishing Goods	Fuel and Lighting	Metals	Lumber and Building Materials
1848	Year.....	1848	1845	1849	1846	1848	1848
	Rank.....	4	1	6	2	4	4
	Year.....	1858	1858	1856	1857	1855	1855
1857	Rank.....	5½	5½	3	4	1½	1½
	Year.....	1872	1873	1872	1871	1873	1873
1873	Rank.....	2½	5	2½	1	5	5
	Year.....	1884	1881	1881	1884	1881	1883
1884	Rank.....	5½	2	2	5½	2	4
	Year.....	1890	1887	1892	1890	1892	1887
1893	Rank.....	3½	1½	5½	3½	5½	1½
	Year.....	1903	1901	1904	1904	1901	1904
1903	Rank.....	3	1½	5	5	1½	5
	Year.....	1908	1908	1908	1908	1908	1908
1907	Rank.....	3½	3½	3½	3½	3½	3½
Total rank		27½	20	27½	24½	23	24½
Final rank		5½	1	5½	3½	2	3½

Rank of consumption goods, 12; of capital goods, 9

TABLE XV

ORDER OF INCREASE OF PROMOTION, LOANS, AND PRICES IN ENGLAND

Before Crisis		Promotion	Loans	Prices
1873	Year.....	1868	1870	1871
	Rank.....	1	2	3
	Year.....	1877	1877	1880
1883	Rank.....	1½	1½	3
	Year.....	1886	1888	1888
1890	Rank.....	1	2½	2½
	Year.....	1894	1895	1897
1900	Rank.....	1	2	3
	Year.....	1904	1904	1904
1907	Rank.....	2	2	2
Total rank.....		6½	10	13½

simple average of items will bring one out at the same conclusions as would be obtained by more complex methods. For this reason

the arithmetic average has been used in a number of the tables because of its simplicity and familiarity to all. Finally, Tables IV–VII are not at all conclusive, and standing alone would have little value, but when presented in conjunction with the other tables may be used as evidence.

In conclusion it may be said that both inductive and deductive methods strengthen the theory that the primary movements of a crisis cycle around which other phenomena may be grouped are: increased promotion activity, expansion of credit, rise of prices; decreased activity in promotion, contraction of credit, fall of prices.

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